

part, transversely to the rotational axis, and a plurality of first apertures extending through the base;

a plurality of commutator terminals, each of the commutator terminals comprising:

a terminal portion having a cutting edge for cutting insulation on a connector portion of a winding and a slot which, in use, straddles and grips said connector portion, and

a contact portion extending through one of said first apertures in the base and being bent at an angle which is substantially perpendicular to the terminal portion so as to lie against or in close proximity to the front surface of the base; and

a plurality of carbon commutator segments formed on the front surface of the base and over the contact portions, respectively, of the terminals.

2. The commutator of claim 1, further comprising a housing having a plurality of housing recesses for receiving the terminal portions, respectively, of the terminals.

3. (Amended) The commutator of claim 2, wherein each housing recess has associated therewith means for positioning the connector portions of the winding relative to each recess; the base, the terminals and the housing being such that with a single

translational movement of the base relative to the housing, the terminal portions enter the housing recesses, the cutting edges strip insulation from the connector portions of the winding and the slots establish and maintain electrical contact with the connector portions of the winding by insulation displacement.

4. The commutator of claim 2, wherein the base has a cylindrical skirt extending rearwardly of its rear surface for receiving the housing.

5. The commutator of claim 1, wherein the front surface of the base has therein a plurality of recesses and each contact portion overlies a respective recess and has at least one aperture through which material forming a respective commutator segment extends into the recess to assist in anchoring the segment to the terminal.

6. The commutator of claim 5, wherein the base has a plurality of second apertures communicating with respective recesses and through which material forming the commutator segments extends to assist in anchoring the segments to the base.

7. The commutator of claim 5, wherein the recesses are elongate and extend radially of the base.

8. The commutator of claim 5, wherein the first apertures are radially aligned with and outwardly disposed of the recesses, respectively.

9. The commutator of claim 5, wherein the base has a plurality of third apertures spaced from the recesses and through which material forming the commutator segments extends to assist in anchoring the commutator segments to the base.

10. (Amended) The commutator of claim 9, wherein two third apertures are associated with each recess, one on either side of a respective recess.

11. The commutator of claim 1, wherein the base has a plurality of third apertures through which material forming the commutator segments extends to assist in anchoring the commutator segments to the base.

12. The commutator of claim 1, wherein the base has a central boss for receiving an armature shaft.

13. The commutator of claim 2, wherein the base has a central boss for receiving an armature shaft.

14. The commutator of claim 13, wherein the housing has a central boss coaxial with the boss of the base for receiving the armature shaft.

Please add claims 15-20 as follows:

-- 15. A planar carbon segment commutator, comprising:

a commutator base of insulating material, the base having a rotational axis, front and rear surfaces extending, at least in part, transversely to the rotational axis, and a plurality of first apertures extending through the base;

a plurality of commutator terminals, each commutator terminal comprising a terminal portion and a contact portion, each contact portion extending through one of said first apertures in the base and being bent to lie against or in close proximity to the front surface of the base, each terminal portion having a cutting edge for cutting insulation on a connector portion of a winding and a slot which, in use, straddles and grips said connector portion; and

a plurality of carbon commutator segments formed on the front surface of the base and over the contact portions, respectively, of the terminals,

wherein the base has a plurality of third apertures through which material forming the carbon commutator segments extends to assist in anchoring the carbon commutator segments to the base.

16. A planar carbon segment commutator comprising:

a commutator base of insulating material, the base having a rotational axis, front and rear surfaces extending, at least in part, transversely to the rotational axis, and a plurality of first apertures extending through the base;

a plurality of commutator terminals, each of the commutator terminals comprising:

a terminal portion having a first slot and a second slot, the planes of which face each other, each of the slots straddling and gripping a connector portion of a winding and having a cutting edge for cutting insulation on said connector portion; and

a contact portion extending through one of said first apertures in the base and being bent to lie against or in close proximity to the front surface of the base; and

a plurality of carbon commutator segments formed on the front surface of the base and over the contact portions, respectively, of the terminals.

17. The planar carbon segment commutator of claim 15, wherein further comprising a housing having a plurality of housing recesses for receiving the terminal portions, respectively, of the terminals.

18. The planar carbon segment commutator of claim 15, wherein each housing recess has associated therewith means for positioning the connector portions of the winding relative to each recess; the base, the terminals and the housing being such that with a single translational movement of the base relative to the housing, the terminal portions enter the housing recesses, the cutting edges strip insulation from the connector portions of the winding and the slots establish and maintain electrical contact with the connector portions of the winding by insulation displacement.

19. The planar carbon segment commutator of claim 16, wherein further comprising a housing having a plurality of housing recesses for receiving the terminal portions, respectively, of the terminals.

20. The planar carbon segment commutator of claim 16, wherein each housing recess has associated therewith means for positioning the connector portions of the winding relative to each recess; the base, the terminals and the housing being such that with a single

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translational movement of the base relative to the housing, the terminal portions enter the housing recesses, the cutting edges strip insulation from the connector portions of the winding and the slots establish and maintain electrical contact with the connector portions of the winding by insulation displacement. --